

CLAIMS:

1. Method of manufacturing a magneto-optical device, comprising the steps of embedding at least one coil (3) in an oxide layer (2), providing the oxide layer (2) with at least one aperture (4), selectively etching said aperture (4) in said oxide layer (2) with the use of a sloping side wall (6) of at least one turn (5) of said coil (3).
- 5 2. Method according to claim 1, wherein the slope of an inner side wall (6) of an inner turn (5i) of said coil (3) is used for selectively etching said aperture (4), such that said aperture (4) extends above and/or through a center of said coil (3).
- 10 3. Method according to claim 1 or 2, wherein a first part (2a) of said oxide layer (2) at least extends between said sloping side wall (6) of said coil turn (5) and a surface (7) of the oxide layer (2), viewed in an axial coil direction (Z), and wherein said aperture (4) is formed by etching of at least a portion of a second part (2b) of said oxide layer (2), which second oxide layer part (2a) adjoins said first oxide layer part (2a).
- 15 4. Method according to of claim 3, wherein a resist layer (8) is provided on said oxide layer surface (7), wherein said resist layer (8) is provided with an aperture (9) which at least provides access to part of the surface of said second oxide layer part (2b), and wherein said second oxide layer part (2b) is etched by means of an etchant that is provided to said
- 20 resist aperture (9).
5. Method according to claims 2 and 4, wherein a diameter (D_r) of the resist aperture (9) is chosen to be larger than the smallest diameter (D_0) of the inner side wall of said inner coil turn (5i), and wherein the diameter (D_r) of the resist aperture (9) is chosen
- 25 smaller than the largest diameter (D_1) of the inner side wall of said inner coil winding (5i).
6. Method according to any one of the preceding claims, wherein an etch stop (10) is provided in and/or below said oxide layer (2), such that the etching of said aperture (4) substantially ends when the aperture (4) has reached a desired depth.

7. Method according to any one of the preceding claims, wherein said at least one coil (3) is embedded in said oxide layer (2) by at least the following steps:
- depositing a resist layer (21) on a substrate (1);
 - 5 - patterning the resist layer (21) with a negative coil pattern;
 - depositing metal (3), preferably in an electroplating process, for forming a metal coil pattern comprising said sloping side wall (6);
 - removing said patterned resist layer (21); and
 - depositing the oxide layer (2), whereupon the surface (7) of the oxide layer (2) is preferably
 - 10 planarized.
8. Method according to claim 7, wherein at least one metal layer (20) is deposited on the substrate (1) before said resist layer (20) is deposited on the substrate (1), and wherein said metal (3) and metal layer (20) are partly removed from the substrate (1)
- 15 after the resist (21) has been removed, for example by sputter etching.
9. Method according to any one of the preceding claims, wherein said oxide layer (2) at least comprises aluminum oxide.
- 20 10. Method according to any one of the preceding claims, wherein a wet etching technique is used for etching the aperture (4) in said oxide layer (2).
11. Magneto-optical device, at least partially manufactured by the method according to any of the preceding claims.
- 25 12. Use of the magneto-optical device according to claim 11 for reading and/or writing information.